

**EXPRESS MAIL CERTIFICATE**



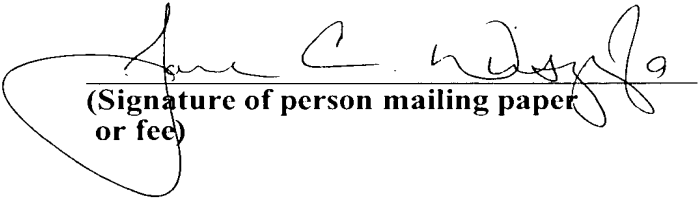
DOCKET NO.: 19603/3356 (CRF D-1595F)  
APPLICANTS: Francis Barany, George Barany, Robert P. Hammer,  
Maria Kempe, Herman Blok, and Monib Zirvi  
TITLE: DETECTION OF NUCLEIC ACID SEQUENCE  
DIFFERENCES USING THE LIGASE DETECTION  
REACTION WITH ADDRESSABLE ARRAYS

Certificate is attached to the **Information Disclosure Statement (1 page) and PTO-1449 Form (8 pages) (in duplicate) with 84 references (references not attached)** of the above-named application.

EXPRESS MAIL NUMBER: EL710758050US  
DATE OF DEPOSIT: September 26, 2001

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner for Patents, Washington, D.C. 20231, Box: Patent Application.

Jane C. Wirszyła  
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(Signature of person mailing paper  
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PATENT  
Docket No.: 19603/3356 (CRF D-1595F)



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|                |                                    |   |                |
|----------------|------------------------------------|---|----------------|
| Applicant(s) : | Barany et al.                      | ) | Examiner:      |
|                |                                    | ) | To Be Assigned |
| Serial No. :   | To Be Assigned                     | ) |                |
|                |                                    | ) | Art Unit:      |
| Cnfrm. No. :   | To Be Assigned                     | ) | To Be Assigned |
|                |                                    | ) |                |
| Filed :        | Herewith                           | ) |                |
|                |                                    | ) |                |
| For :          | DETECTION OF NUCLEIC ACID SEQUENCE | ) |                |
|                | DIFFERENCES USING THE LIGASE       | ) |                |
|                | DETECTION REACTION WITH            | ) |                |
|                | ADDRESSABLE ARRAYS                 | ) |                |

INFORMATION DISCLOSURE STATEMENT  
UNDER 37 CFR §§ 1.97-1.98

Commissioner for Patents  
Washington, D.C. 20231  
**Box: Patent Application**

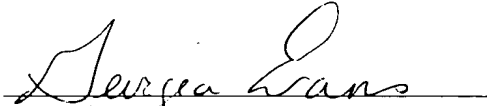
Dear Sir:

Pursuant to 37 CFR §§ 1.97-1.98, applicants hereby bring to the attention of the United States Patent and Trademark Office ("PTO"), the references listed on the attached PTO-1449 form.

Pursuant to 37 CFR § 1.98(d), the references identified on the attached PTO-1449 form are not provided, because these references either were previously cited by or submitted to the PTO in parent U.S. Patent Application Serial No. 08/794,851, filed February 4, 1997, of which this application claims priority under 35 USC § 120.

Respectfully submitted,

Date: September 26, 2001

  
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|  | APPLICANT<br><br><b>Barany et al.</b>     |                                      |
|  | FILING DATE<br><br><b>Herewith</b>        | GROUP ART UNIT<br><br>To Be Assigned |

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## U.S. PATENT DOCUMENTS

| EXAMINER<br>INITIAL |   | DOCUMENT<br>NUMBER | DATE      | NAME               | CLASS | SUBCLASS | FILING<br>DATE<br>IF<br>APPRO-<br>PRIATE |
|---------------------|---|--------------------|-----------|--------------------|-------|----------|--|
|                     | 1 | 5,143,854          | 9/1/1992  | Pirung et al.      |       |          |  |
|                     | 2 | 5,202,231          | 4/13/1993 | Drmanac et al.     |       |          |  |
|                     | 3 | 5,258,506          | 11/2/1993 | Urdea et al.       |       |          |  |
|                     | 4 | 5,288,468          | 2/22/1994 | Church et al.      |       |          |  |
|                     | 5 | 5,371,241          | 12/6/1994 | Brush et al.       |       |          |  |
|                     | 6 | 5,424,186          | 6/13/1995 | Fodor et al.       |       |          |  |
|                     | 7 | 5,278,298          | 1/11/1994 | Chakraborty et al. |       |          |  |

## FOREIGN PATENT DOCUMENTS

|  |    | DOCUMENT<br>NUMBER | DATE      | COUNTRY | CLASS | SUBCLASS | TRANS-<br>LATION<br>IF<br>APPRO-<br>PRIATE |
|--|----|--------------------|-----------|---------|-------|----------|--|
|  | 8  | WO 89/10977        | 16-NOV-89 | Europe  |       |          |  |
|  | 9  | WO 90/15070        | 13-DEC-90 | Europe  |       |          |  |
|  | 10 | WO 92/10588        | 25-JUN-92 | Europe  |       |          |  |
|  | 11 | WO 92/16655        | 1-OCT-92  | PCT     |       |          |  |
|  | 12 | EP 0 601 714 A1    | 15-JUN-94 | Europe  |       |          |  |

## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

|   |  |    |  |
|---|--|----|--|
|   |  | 13 | Day et al., "Detection of Steroid 21-Hydroxylase Alleles Using Gene-Specific PCR and a Multiplexed Ligation Detection Reaction," <u>Genomics</u> , 29:152-162 (1995)   |
|   |  | 14 | Grossman et al., "High-Density Multiplex Detection of Nucleic Acid Sequences: Oligonucleotide Ligation Assay and Sequence-Coded Separation," <u>Nucleic Acids Research</u> , 22(21):4527-4534(1994)  |
|   |  | 15 | Jin et al., "Alternating Current Impedance Characterization of the Structure of Alkylsiloxane Self-Assembled Monolayers on Silicon," <u>Langmuir</u> , 10:2662-2671 (1994)   |
|   |  | 16 | Cheng et al., "In Situ Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy of Carboxylate-Bearing, Siloxane-Anchored, Self-Assembled Monolayers: A Study of Carboxylate Reactivity and Acid-Base Properties," <u>Langmuir</u> , 11:1190-1195 (1995) |
| EXAMINER  |  |    | DATE CONSIDERED  |
| EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. |  |    |  |

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| U.S. DEPARTMENT OF COMMERCE<br>PATENT AND TRADEMARK OFFICE<br><br>INFORMATION DISCLOSURE<br>STATEMENT BY APPLICANT<br><br>(use several sheets if necessary)<br><br>(PTO-1449 ) | ATTY. DOCKET NO.<br><br><b>19603/3356</b> | SERIAL NO.<br><br><b>To Be Assigned</b>     |
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|  | FILING DATE<br><br><b>Herewith</b>        | GROUP ART UNIT<br><br><b>To Be Assigned</b> |

## U.S. PATENT DOCUMENTS

| EXAMINER<br>INITIAL |    | DOCUMENT<br>NUMBER | DATE       | NAME                 | CLASS | SUBCLASS | FILING<br>DATE<br>IF<br>APPRO-<br>PRIATE |
|---------------------|----|--------------------|------------|----------------------|-------|----------|--|
|                     | 17 | 5,290,925          | 3/1/1994   | Fino                 |       |          |  |
|                     | 18 | 5,324,633          | 6/28/1994  | Fodor et al.         |       |          |  |
|                     | 19 | 5,352,582          | 10/4/1994  | Lichtenwalter et al. |       |          |  |
|                     | 20 | 5,405,783          | 4/11/1995  | Pirrung et al.       |       |          |  |
|                     | 21 | 5,470,705          | 11/28/1995 | Grossman et al.      |       |          |  |
|                     | 22 | 5,494,810          | 2/27/1996  | Barany et al.        |       |          |  |
|                     | 23 | 5,525,464          | 06/11/96   | Drmanac et al.       |       |          |  |

## FOREIGN PATENT DOCUMENTS

|  |    | DOCUMENT<br>NUMBER | DATE      | COUNTRY | CLASS | SUBCLASS | TRAN-<br>SLATION<br>IF<br>APPRO-<br>PRIATE |
|--|----|--------------------|-----------|---------|-------|----------|--|
|  | 24 | WO 93/17126        | 2-SEPT-93 | Europe  |       |          |  |
|  | 25 | WO 93/20236        | 14-OCT-93 | Europe  |       |          |  |
|  | 26 | WO 94/17210        | 4-AUG-94  | Europe  |       |          |  |
|  | 27 | WO 94/17206        | 4-AUG-94  | Europe  |       |          |  |
|  | 28 | WO 94/11530        | 26-MAY-94 | Europe  |       |          |  |

## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

|  |  |    |  |
|--|--|----|--|
|  |  | 29 | Kim et al., "Polymeric Self-Assembled Monolayers. 2. Synthesis and Characterization of Self-Assembled Polydiacetylene Mono- and Multilayers," <u>J. Am. Chem. Soc.</u> , 117:3963-3967 (1995)                                      |
|  |  | 30 | Lauer et al., "Cloning, Nucleotide Sequence, and Engineered Expression of <i>Thermus thermophilus</i> DNA Ligase, a Homolog of <i>Escherichia coli</i> DNA Ligase," <u>Journal of Bacteriology</u> , 173(16):5047-5053 (1991)      |
|  |  | 31 | Barany et al., "Cloning, Overexpression and Nucleotide Sequence of a Thermostable DNA Ligase-Encoding Gene," <u>Gene</u> , 109:1-11 (1991)   |
|  |  | 32 | Jou et al., "Deletion Detection in the Dystrophin Gene by Multiplex Gap Ligase Chain Reaction and Immunochromatographic Strip Technology," <u>Human Mutation</u> , 5:86-93 (1995)  |
|  |  | 33 | Chan et al., "Polymeric Self-Assembled Monolayers. 3. Pattern Transfer by Use of Photolithography, Electrochemical Methods, and an Ultrathin, Self-Assembled Diacetylenic Resist," <u>J. Am. Chem. Soc.</u> , 117:5875-5976 (1995) |

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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| U.S. DEPARTMENT OF COMMERCE<br>PATENT AND TRADEMARK OFFICE<br><br>INFORMATION DISCLOSURE<br>STATEMENT BY APPLICANT<br><br>(use several sheets if necessary)<br><br>(PTO-1449 ) | ATTY. DOCKET NO.<br><br><b>19603/3356</b> | SERIAL NO.<br><br><b>To Be Assigned</b>     |
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|  | FILING DATE<br><br><b>Herewith</b>        | GROUP ART UNIT<br><br><b>To Be Assigned</b> |

## U.S. PATENT DOCUMENTS

| EXAMINER<br>INITIAL |    | DOCUMENT<br>NUMBER | DATE     | NAME            | CLASS | SUBCLASS | FILING<br>DATE<br>IF<br>APPRO-<br>PRIATE |
|---------------------|----|--------------------|----------|-----------------|-------|----------|--|
|                     | 34 | 5,412,087          | 05/02/95 | McGall et al.   |       |          |  |
|                     | 35 | 4,883,750          | 11/28/89 | Whiteley et al. |       |          |  |
|                     | 36 | 4,683,202          | 07/28/87 | Mullis et al.   |       |          |  |
|                     | 37 | 5,744,305          | 04/28/98 | Fodor et al.    |       |          |  |
|                     | 38 | 5,695,934          | 12/09/97 | Brenner         |       |          |  |
|                     | 39 | 5,981,176          | 11/09/99 | Wallace         |       |          |  |
|                     | 40 | 5,415,839          | 5/16/95  | Zaun et al.     |       |          |  |

## FOREIGN PATENT DOCUMENTS

|  |    | DOCUMENT<br>NUMBER | DATE     | COUNTRY | CLASS | SUBCLASS | TRAN-<br>SLATION<br>IF<br>APPRO-<br>PRIATE |
|--|----|--------------------|----------|---------|-------|----------|--|
|  | 41 | WO 94/09022        | 04/28/94 | WO      |       |          |  |
|  | 42 | WO 90/11372        | 4/1990   | WO      |       |          |  |
|  | 43 | WO 93/25563        | 12/1993  | WO      |       |          |  |
|  |    |                    |          |         |       |          |  |
|  |    |                    |          |         |       |          |  |

## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

7

|   |  |    |   |
|---|--|----|---|
|   |  | 44 | Munkholm et al., "Polymer Modification of Fiber Optic Chemical Sensors as a Method of Enhancing Fluorescence Signal for pH Measurement," <u>Anal. Chem.</u> , 58:1427-1430 (1986) |
|   |  | 45 | Graham et al., "Gene Probe Assays on a Fibre-Optic Evanescent Wave Biosensor," <u>Biosensors &amp; Bioelectronics</u> , 7:487-493 (1992)  |
|   |  | 46 | Chetverin et al., "Sequencing of Pools of Nucleic Acids on Oligonucleotide Arrays," <u>BioSystems</u> , 30:215-231 (1993)   |
|   |  | 47 | Pease et al., "Light-Generated Oligonucleotide Arrays for Rapid DNA Sequence Analysis," <u>Proc. Natl. Acad. Sci. USA</u> , 91:5022-5026 (1994)                                   |
|   |  | 48 | Beattie et al., "Advances in Genosensor Research," <u>Clin. Chem.</u> , 41(5) 700-706 (1995)  |
| EXAMINER  |  |    | DATE CONSIDERED   |
| EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. |  |    |   |

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| U.S. DEPARTMENT OF COMMERCE<br>PATENT AND TRADEMARK OFFICE<br><br>INFORMATION DISCLOSURE<br>STATEMENT BY APPLICANT<br><br>(use several sheets if necessary)<br><br>(PTO-1449 ) | ATTY. DOCKET NO.<br><br><b>19603/3356</b> |  | SERIAL NO.<br><br><b>To Be Assigned</b>     |
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|  | FILING DATE<br><br><b>Herewith</b>        |  | GROUP ART UNIT<br><br><b>To Be Assigned</b> |

## U.S. PATENT DOCUMENTS

| EXAMINER<br>INITIAL |    | DOCUMENT<br>NUMBER | DATE     | NAME         | CLASS | SUBCLASS | FILING<br>DATE<br>IF<br>APPRO-<br>PRIATE |
|---------------------|----|--------------------|----------|--------------|-------|----------|--|
|                     | 49 | 5,834,181          | 11/10/98 | Shuber       |       |          |  |
|                     | 50 | 5,648,213          | 7/15/97  | Reddy et al. |       |          |  |
|                     | 51 | 5,667,974          | 9/16/97  | Brikenmeyer  |       |          |  |
|                     | 52 | 5,391,480          | 2/21/95  | Davis et al. |       |          |  |

## FOREIGN PATENT DOCUMENTS

|  |  | DOCUMENT<br>NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRAN-<br>SLATION<br>IF<br>APPRO-<br>PRIATE |
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|  |  |                    |      |         |       |          |  |

## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

|  |  |    |  |
|--|--|----|--|
|  |  | 53 | Bains, "Mixed Hybridization and Conventional Strategies for DNA Sequencing," <u>Gata</u> , 10(3-4):84-94 (1993)  |
|  |  | 54 | Kuznetsova et al., "DNA Sequencing by Hybridization with Oligonucleotides Immobilized in a Gel," <u>Mol. Biol. (Mosk)</u> (Russia), 28(2):290-299  |
|  |  | 55 | Lysov et al., "Measurement of Distances Between DNA Segments Increases the Efficiency of Sequencing by Hybridization with Oligonucleotide Matrix," <u>Molecular Biology</u> , 28(3):433-436 (1994)   |
|  |  | 56 | Livshits et al., "Dissociation of Duplexes Formed by Hybridization of DNA with Gel-Immobilized Oligonucleotides," <u>Journal of Biomolecular Structure &amp; Dynamics</u> , 11(4):783-812 (1994)   |
|  |  | 57 | Davis et al., "Quantitative Detection of Hepatitis C Virus RNA With a Solid-phase Signal Amplification Method: Definition of Optimal Conditions for Specimen Collection and Clinical Application in Interferon-treated Patients," <u>Hepatology</u> , 19(6):1337-1341 (1994) |
|  |  | 58 | Urdea, "Synthesis and Characterization of Branched DNA (bDNA) for the Direct and Quantitative Detection of CMV, HBV, HCV, and HIV," <u>Clinical Chemistry</u> , 39(4):725-726 (1993)   |
|  |  | 59 | Reynolds et al., "Analysis of Genetic Markers in Forensic DNA Samples Using the Polymerase Chain Reaction," <u>Anal. Chem.</u> , 63:2-15 (1991))   |

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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## U.S. PATENT DOCUMENTS

| EXAMINER<br>INITIAL |    | DOCUMENT<br>NUMBER | DATE    | NAME          | CLASS | SUBCLASS | FILING<br>DATE<br>IF<br>APPRO-<br>PRIATE |
|---------------------|----|--------------------|---------|---------------|-------|----------|--|
|                     | 60 | 6,027,889          | 2/22/00 | Barany et al. |       |          |  |
|                     |    |                    |         |               |       |          |  |
|                     |    |                    |         |               |       |          |  |
|                     |    |                    |         |               |       |          |  |

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## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

|  |  |    |   |
|--|--|----|---|
|  |  | 61 | Buyse et al., "Rapid DNA Typing of Class II HLA Antigens Using the Polymerase Chain Reaction and Reverse Dot Blot Hybridization," <u>Tissue Antigens</u> , 41:1-14 (1993)   |
|  |  | 62 | Gyllensten et al., "PCR-Based HLA Class II Typing," <u>PCR Meth. Appl.</u> , 1:91-98 (1991)   |
|  |  | 63 | Chamberlain et al., "Deletion Screening of the Duchenne Muscular Dystrophy Locus Via Multiplex DNA Amplification," <u>Nucleic Acids Res.</u> , 16:11141-56 (1988)   |
|  |  | 64 | Tsui, Mutations and Sequence Variations Detected in the Cystic Fibrosis Transmembrane Conductance Regulator (CFTR) Gene: A Report From the Cystic Fibrosis Genetic Analysis Consortium," <u>Human Mutat.</u> , 1:197-203 (1992) |
|  |  | 65 | Hollstein et al., "p53 Mutations in Human Cancers," <u>Science</u> , 253:49-53 (1991)   |
|  |  | 66 | Saiki, et al., "Enzymatic Amplification of $\beta$ -Globin Genomic Sequences and Restriction Site Analysis for Diagnosis of Sickle Cell Anemia," <u>Science</u> , 230:1350 (1985)   |
|  |  | 67 | Wu, et al., "The Ligation Amplification Reaction (LAR) -- Amplification of Specific DNA Sequences Using Sequential Rounds of Template-Dependent Ligation," <u>Genomics</u> , 4:560-69 (1989)                                    |

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

|  |  |    |   |
|--|--|----|---|
|  |  | 68 | Landegren, et al., "A Ligase-Mediated Gene Detection Technique," <u>Science</u> , 241:1077-80 (1988)  |
|  |  | 69 | Winn-Deen, et al., "Sensitive Fluorescence Method for Detecting DNA Ligation Amplification Products," <u>Clinical Chemistry</u> , 37(9):1522-23 (1991)                    |
|  |  | 70 | Barany, "Genetic Disease Detection and DNA Amplification Using Cloned Thermostable Ligase," <u>Proc. Nat'l Acad. Sci. USA</u> , 88:189-93 (1991)                          |
|  |  | 71 | Barany, "The Ligase Chain Reaction in a PCR World," <u>PCR Methods and Applications</u> , 1:5-16 (1991)   |
|  |  | 72 | Gibbs et al., "Detection of Single DNA Base Differences by Competitive Oligonucleotide Priming," <u>Nucleic Acids Res.</u> , 17:2437-48 (1989)                            |
|  |  | 73 | Chehab, et al., "Detection of Specific DNA Sequences by Fluorescence Amplification: A Color Complementation Assay," <u>Proc. Natl. Acad. Sci. USA</u> , 86:9178-82 (1989) |
|  |  | 74 | Livak et al., "Detection of Single Base Differences Using Biotinylated Nucleotides With Very Long Linker Arms," <u>Nucleic Acids Res.</u> , 20:4831-37 (1989)             |

|          |                 |
|----------|-----------------|
| EXAMINER | DATE CONSIDERED |
|----------|-----------------|

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| EXAMINER<br>INITIAL |  | DOCUMENT<br>NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING<br>DATE<br>IF<br>APPRO-<br>PRIATE |
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## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

|   |  |    |   |
|---|--|----|---|
|   |  | 75 | Nickerson et al., "Automated DNA Diagnostics Using an ELISA-Based Oligonucleotide Ligation Assay," <u>Proc. Natl. Acad. Sci. USA</u> , 87:8923-27 (1990)          |
|   |  | 76 | Cronin et al., "Cystic Fibrosis Mutation Detection by Hybridization to Light-Generated DNA Probe Arrays," <u>Human Mutation</u> , 7:244-255 (1996)                |
|   |  | 77 | Milner et al., "Selecting Effective Antisense Reagents on Combinatorial Oligonucleotide Arrays," <u>Nature Biotechnology</u> , 15:537-541 (1997)                  |
|   |  | 78 | Wang et al., "Large-Scale Identification, Mapping, and Genotyping of Single-Nucleotide Polymorphisms in the Humane Genome," <u>Science</u> , 280:1077-1082 (1998) |
|   |  | 79 | Southern, "DNA Chips: Analysing Sequence by Hybridization to Oligonucleotides on a Large Scale," <u>TIG</u> , 12(3):110-115 (1996)                                |
|   |  | 80 | Barany, "Ligase Chain Reaction (LCR) - Overview and Applications," <u>PCR Methods and Applications</u> , 3(4):S51-S64 (1994)                                      |
|   |  | 81 | Iovannisci et al., "Ligation Amplification and Fluorescence Detection of Mycobacterium Tuberculosis DNA," <u>Mol. Cell. Probes</u> , 7(1):35-43 (1993)            |
| EXAMINER  |  |    | DATE CONSIDERED   |
| EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. |  |    |   |

|  |                  |                |
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| U.S. DEPARTMENT OF COMMERCE<br>PATENT AND TRADEMARK OFFICE<br><br>INFORMATION DISCLOSURE<br>STATEMENT BY APPLICANT<br><br>(use several sheets if necessary)<br><br>(PTO-1449 ) | ATTY. DOCKET NO. | SERIAL NO.     |
|  | 19603/3356       | To Be Assigned |
|  | APPLICANT        |                |
|  | Barany et al.    |                |
|  | FILING DATE      | GROUP ART UNIT |
|  | Herewith         | To Be Assigned |

## U.S. PATENT DOCUMENTS

| EXAMINER<br>INITIAL |  | DOCUMENT<br>NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING<br>DATE<br>IF<br>APPRO-<br>PRIATE |
|---------------------|--|--------------------|------|------|-------|----------|--|
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## FOREIGN PATENT DOCUMENTS

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|  |  |                    |      |         |       |          |  |

## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

|   |  |    |  |
|---|--|----|--|
|   |  | 82 | Telenti et al., "Competitive Polymerase Chain Reaction Using an Internal Standard: Application to the Quantitation of Viral DNA," <u>J. Virol. Meth.</u> , 39(3):259-268 (1992)        |
|   |  | 83 | Guo et al., "Direct Fluorescence Analysis of Genetic Polymorphisms by Hybridization with Oligonucleotide Arrays on Glass Supports," <u>Nucl. Acids. Res.</u> , 22(24):5456-5465 (1994) |
|   |  | 84 | Sambrook et al., <u>Molecular Cloning A Laboratory Manual</u> , 2 <sup>nd</sup> Ed., Cold Spring Laboratory Press (1989)   |
|   |  |    |  |
|   |  |    |  |
|   |  |    |  |
|   |  |    |  |
| EXAMINER  |  |    | DATE CONSIDERED  |
| EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. |  |    |  |

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|--|------------------------------------|--------------------------------------|
| U.S. DEPARTMENT OF COMMERCE<br>PATENT AND TRADEMARK OFFICE<br><br>INFORMATION DISCLOSURE<br>STATEMENT BY APPLICANT<br><br>(use several sheets if necessary)<br><br>(PTO-1449 ) | ATTY. DOCKET NO.<br><br>19603/3356 | SERIAL NO.<br><br>To Be Assigned     |
|  | APPLICANT<br><br>Barany et al.     |                                      |
|  | FILING DATE<br><br>Herewith        | GROUP ART UNIT<br><br>To Be Assigned |

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## U.S. PATENT DOCUMENTS

| EXAMINER<br>INITIAL |   | DOCUMENT<br>NUMBER | DATE      | NAME               | CLASS | SUBCLASS | FILING<br>DATE<br>IF<br>APPRO-<br>PRIATE |
|---------------------|---|--------------------|-----------|--------------------|-------|----------|--|
|                     | 1 | 5,143,854          | 9/1/1992  | Pirrung et al.     |       |          |  |
|                     | 2 | 5,202,231          | 4/13/1993 | Drmanac et al.     |       |          |  |
|                     | 3 | 5,258,506          | 11/2/1993 | Urdea et al.       |       |          |  |
|                     | 4 | 5,288,468          | 2/22/1994 | Church et al.      |       |          |  |
|                     | 5 | 5,371,241          | 12/6/1994 | Brush et al.       |       |          |  |
|                     | 6 | 5,424,186          | 6/13/1995 | Fodor et al.       |       |          |  |
|                     | 7 | 5,278,298          | 1/11/1994 | Chakraborty et al. |       |          |  |

## FOREIGN PATENT DOCUMENTS

|  |    | DOCUMENT<br>NUMBER | DATE      | COUNTRY | CLASS | SUBCLASS | TRANS-<br>LATION<br>IF<br>APPRO-<br>PRIATE |
|--|----|--------------------|-----------|---------|-------|----------|--|
|  | 8  | WO 89/10977        | 16-NOV-89 | Europe  |       |          |  |
|  | 9  | WO 90/15070        | 13-DEC-90 | Europe  |       |          |  |
|  | 10 | WO 92/10588        | 25-JUN-92 | Europe  |       |          |  |
|  | 11 | WO 92/16655        | 1-OCT-92  | PCT     |       |          |  |
|  | 12 | EP 0 601 714 A1    | 15-JUN-94 | Europe  |       |          |  |

## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

|   |  |    |  |
|---|--|----|--|
|   |  | 13 | Day et al., "Detection of Steroid 21-Hydroxylase Alleles Using Gene-Specific PCR and a Multiplexed Ligation Detection Reaction," <u>Genomics</u> , 29:152-162 (1995)   |
|   |  | 14 | Grossman et al., "High-Density Multiplex Detection of Nucleic Acid Sequences: Oligonucleotide Ligation Assay and Sequence-Coded Separation," <u>Nucleic Acids Research</u> , 22(21):4527-4534(1994)  |
|   |  | 15 | Jin et al., "Alternating Current Impedance Characterization of the Structure of Alkylsiloxane Self-Assembled Monolayers on Silicon," <u>Langmuir</u> , 10:2662-2671 (1994)   |
|   |  | 16 | Cheng et al., "In Situ Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy of Carboxylate-Bearing, Siloxane-Anchored, Self-Assembled Monolayers: A Study of Carboxylate Reactivity and Acid-Base Properties," <u>Langmuir</u> , 11:1190-1195 (1995) |
| EXAMINER  |  |    | DATE CONSIDERED  |
| EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. |  |    |  |

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| U.S. DEPARTMENT OF COMMERCE<br>PATENT AND TRADEMARK OFFICE<br><br>INFORMATION DISCLOSURE<br>STATEMENT BY APPLICANT<br><br>(use several sheets if necessary)<br><br>(PTO-1449 ) | ATTY. DOCKET NO.<br><br><b>19603/3356</b> | SERIAL NO.<br><br><b>To Be Assigned</b>     |
|  | APPLICANT<br><br><b>Barany et al.</b>     |   |
|  | FILING DATE<br><br><b>Herewith</b>        | GROUP ART UNIT<br><br><b>To Be Assigned</b> |

## U.S. PATENT DOCUMENTS

| EXAMINER<br>INITIAL |    | DOCUMENT<br>NUMBER | DATE       | NAME                 | CLASS | SUBCLASS | FILING<br>DATE<br>IF<br>APPRO-<br>PRIATE |
|---------------------|----|--------------------|------------|----------------------|-------|----------|--|
|                     | 17 | 5,290,925          | 3/1/1994   | Fino                 |       |          |  |
|                     | 18 | 5,324,633          | 6/28/1994  | Fodor et al.         |       |          |  |
|                     | 19 | 5,352,582          | 10/4/1994  | Lichtenwalter et al. |       |          |  |
|                     | 20 | 5,405,783          | 4/11/1995  | Pirrung et al.       |       |          |  |
|                     | 21 | 5,470,705          | 11/28/1995 | Grossman et al.      |       |          |  |
|                     | 22 | 5,494,810          | 2/27/1996  | Barany et al.        |       |          |  |
|                     | 23 | 5,525,464          | 06/11/96   | Drmanac et al.       |       |          |  |

## FOREIGN PATENT DOCUMENTS

|  |    | DOCUMENT<br>NUMBER | DATE      | COUNTRY | CLASS | SUBCLASS | TRANS-<br>LATION<br>IF<br>APPRO-<br>PRIATE |
|--|----|--------------------|-----------|---------|-------|----------|--|
|  | 24 | WO 93/17126        | 2-SEPT-93 | Europe  |       |          |  |
|  | 25 | WO 93/20236        | 14-OCT-93 | Europe  |       |          |  |
|  | 26 | WO 94/17210        | 4-AUG-94  | Europe  |       |          |  |
|  | 27 | WO 94/17206        | 4-AUG-94  | Europe  |       |          |  |
|  | 28 | WO 94/11530        | 26-MAY-94 | Europe  |       |          |  |

## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

|   |  |    |  |
|---|--|----|--|
|   |  | 29 | Kim et al., "Polymeric Self-Assembled Monolayers. 2. Synthesis and Characterization of Self-Assembled Polydiacetylene Mono- and Multilayers," <u>J. Am. Chem. Soc.</u> , 117:3963-3967 (1995)                                      |
|   |  | 30 | Lauer et al., "Cloning, Nucleotide Sequence, and Engineered Expression of <i>Thermus thermophilus</i> DNA Ligase, a Homolog of <i>Escherichia coli</i> DNA Ligase," <u>Journal of Bacteriology</u> , 173(16):5047-5053 (1991)      |
|   |  | 31 | Barany et al., "Cloning, Overexpression and Nucleotide Sequence of a Thermostable DNA Ligase-Encoding Gene," <u>Gene</u> , 109:1-11 (1991)   |
|   |  | 32 | Jou et al., "Deletion Detection in the Dystrophin Gene by Multiplex Gap Ligase Chain Reaction and Immunochromatographic Strip Technology, <u>Human Mutation</u> , 5:86-93 (1995)   |
|   |  | 33 | Chan et al., "Polymeric Self-Assembled Monolayers. 3. Pattern Transfer by Use of Photolithography, Electrochemical Methods, and an Ultrathin, Self-Assembled Diacetylenic Resist," <u>J. Am. Chem. Soc.</u> , 117:5875-5976 (1995) |
| EXAMINER  |  |    | DATE CONSIDERED  |
| EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. |  |    |  |

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|--|------------------|--|----------------|
| U.S. DEPARTMENT OF COMMERCE<br>PATENT AND TRADEMARK OFFICE<br><br>INFORMATION DISCLOSURE<br>STATEMENT BY APPLICANT<br><br>(use several sheets if necessary)<br><br>(PTO-1449 ) | ATTY. DOCKET NO. |  | SERIAL NO.     |
|  | 19603/3356       |  | To Be Assigned |
|  | APPLICANT        |  |                |
|  | Barany et al.    |  |                |
|  | FILING DATE      |  | GROUP ART UNIT |
|  | Herewith         |  | To Be Assigned |

## U.S. PATENT DOCUMENTS

| EXAMINER<br>INITIAL |    | DOCUMENT<br>NUMBER | DATE     | NAME            | CLASS | SUBCLASS | FILING<br>DATE<br>IF<br>APPRO-<br>PRIATE |
|---------------------|----|--------------------|----------|-----------------|-------|----------|--|
|                     | 34 | 5,412,087          | 05/02/95 | McGall et al.   |       |          |  |
|                     | 35 | 4,883,750          | 11/28/89 | Whiteley et al. |       |          |  |
|                     | 36 | 4,683,202          | 07/28/87 | Mullis et al.   |       |          |  |
|                     | 37 | 5,744,305          | 04/28/98 | Fodor et al.    |       |          |  |
|                     | 38 | 5,695,934          | 12/09/97 | Brenner         |       |          |  |
|                     | 39 | 5,981,176          | 11/09/99 | Wallace         |       |          |  |
|                     | 40 | 5,415,839          | 5/16/95  | Zaun et al.     |       |          |  |

## FOREIGN PATENT DOCUMENTS

|  |    | DOCUMENT<br>NUMBER | DATE     | COUNTRY | CLASS | SUBCLASS | TRAN-<br>SLATION<br>IF<br>APPRO-<br>PRIATE |
|--|----|--------------------|----------|---------|-------|----------|--|
|  | 41 | WO 94/09022        | 04/28/94 | WO      |       |          |  |
|  | 42 | WO 90/11372        | 4/1990   | WO      |       |          |  |
|  | 43 | WO 93/25563        | 12/1993  | WO      |       |          |  |
|  |    |                    |          |         |       |          |  |
|  |    |                    |          |         |       |          |  |

## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

7

|   |  |                 |   |
|---|--|-----------------|---|
|   |  | 44              | Munkholm et al., "Polymer Modification of Fiber Optic Chemical Sensors as a Method of Enhancing Fluorescence Signal for pH Measurement," <u>Anal. Chem.</u> , 58:1427-1430 (1986) |
|   |  | 45              | Graham et al., "Gene Probe Assays on a Fibre-Optic Evanescent Wave Biosensor," <u>Biosensors &amp; Bioelectronics</u> , 7:487-493 (1992)  |
|   |  | 46              | Chetverin et al., "Sequencing of Pools of Nucleic Acids on Oligonucleotide Arrays," <u>BioSystems</u> , 30:215-231 (1993)   |
|   |  | 47              | Pease et al., "Light-Generated Oligonucleotide Arrays for Rapid DNA Sequence Analysis," <u>Proc. Natl. Acad. Sci. USA</u> , 91:5022-5026 (1994)                                   |
|   |  | 48              | Beattie et al., "Advances in Genosensor Research," <u>Clin. Chem.</u> , 41(5) 700-706 (1995)  |
| EXAMINER  |  | DATE CONSIDERED |   |
| EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. |  |                 |   |

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| U.S. DEPARTMENT OF COMMERCE<br>PATENT AND TRADEMARK OFFICE<br><br>INFORMATION DISCLOSURE<br>STATEMENT BY APPLICANT<br><br>(use several sheets if necessary)<br><br>(PTO-1449 ) | ATTY. DOCKET NO.<br><br><b>19603/3356</b> | SERIAL NO.<br><br><b>To Be Assigned</b>     |
|  | APPLICANT<br><br><b>Barany et al.</b>     |   |
|  | FILING DATE<br><br><b>Herewith</b>        | GROUP ART UNIT<br><br><b>To Be Assigned</b> |

## U.S. PATENT DOCUMENTS

| EXAMINER<br>INITIAL |    | DOCUMENT<br>NUMBER | DATE     | NAME         | CLASS | SUBCLASS | FILING<br>DATE<br>IF<br>APPRO-<br>PRIATE |
|---------------------|----|--------------------|----------|--------------|-------|----------|--|
|                     | 49 | 5,834,181          | 11/10/98 | Shuber       |       |          |  |
|                     | 50 | 5,648,213          | 7/15/97  | Reddy et al. |       |          |  |
|                     | 51 | 5,667,974          | 9/16/97  | Brikenmeyer  |       |          |  |
|                     | 52 | 5,391,480          | 2/21/95  | Davis et al. |       |          |  |

## FOREIGN PATENT DOCUMENTS

|  |  | DOCUMENT<br>NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANS-<br>LATION<br>IF<br>APPRO-<br>PRIATE |
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|  |  |                    |      |         |       |          |  |

## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

|   |  |    |  |
|---|--|----|--|
|   |  | 53 | Bains, "Mixed Hybridization and Conventional Strategies for DNA Sequencing," <u>Gata</u> , 10(3-4):84-94 (1993)  |
|   |  | 54 | Kuznetsova et al., "DNA Sequencing by Hybridization with Oligonucleotides Immobilized in a Gel," <u>Mol. Biol. (Mosk)</u> (Russia), 28(2):290-299  |
|   |  | 55 | Lysov et al., "Measurement of Distances Between DNA Segments Increases the Efficiency of Sequencing by Hybridization with Oligonucleotide Matrix," <u>Molecular Biology</u> , 28(3):433-436 (1994)   |
|   |  | 56 | Livshits et al., "Dissociation of Duplexes Formed by Hybridization of DNA with Gel-Immobilized Oligonucleotides," <u>Journal of Biomolecular Structure &amp; Dynamics</u> , 11(4):783-812 (1994)   |
|   |  | 57 | Davis et al., "Quantitative Detection of Hepatitis C Virus RNA With a Solid-phase Signal Amplification Method: Definition of Optimal Conditions for Specimen Collection and Clinical Application in Interferon-treated Patients," <u>Hepatology</u> , 19(6):1337-1341 (1994) |
|   |  | 58 | Urdea, "Synthesis and Characterization of Branched DNA (bDNA) for the Direct and Quantitative Detection of CMV, HBV, HCV, and HIV," <u>Clinical Chemistry</u> , 39(4):725-726 (1993)   |
|   |  | 59 | Reynolds et al., "Analysis of Genetic Markers in Forensic DNA Samples Using the Polymerase Chain Reaction," <u>Anal. Chem.</u> , 63:2-15 (1991))   |
| EXAMINER  |  |    | DATE CONSIDERED  |
| EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. |  |    |  |

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| U.S. DEPARTMENT OF COMMERCE<br>PATENT AND TRADEMARK OFFICE<br><br>INFORMATION DISCLOSURE<br>STATEMENT BY APPLICANT<br><br>(use several sheets if necessary)<br><br>(PTO-1449 ) | ATTY. DOCKET NO.<br><br><b>19603/3356</b> | SERIAL NO.<br><br><b>To Be Assigned</b>     |
|  | APPLICANT<br><br><b>Barany et al.</b>     |   |
|  | FILING DATE<br><br><b>Herewith</b>        | GROUP ART UNIT<br><br><b>To Be Assigned</b> |

## U.S. PATENT DOCUMENTS

| EXAMINER<br>INITIAL |    | DOCUMENT<br>NUMBER | DATE    | NAME          | CLASS | SUBCLASS | FILING<br>DATE<br>IF<br>APPRO-<br>PRIATE |
|---------------------|----|--------------------|---------|---------------|-------|----------|--|
|                     | 60 | 6,027,889          | 2/22/00 | Barany et al. |       |          |  |
|                     |    |                    |         |               |       |          |  |
|                     |    |                    |         |               |       |          |  |
|                     |    |                    |         |               |       |          |  |

## FOREIGN PATENT DOCUMENTS

|  |  | DOCUMENT<br>NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANS-<br>LATION<br>IF<br>APPRO-<br>PRIATE |
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|  |  |                    |      |         |       |          |  |

## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

|   |  |    |   |
|---|--|----|---|
|   |  | 61 | Buyse et al., "Rapid DNA Typing of Class II HLA Antigens Using the Polymerase Chain Reaction and Reverse Dot Blot Hybridization," <u>Tissue Antigens</u> , 41:1-14 (1993)   |
|   |  | 62 | Gyllenstein et al., "PCR-Based HLA Class II Typing," <u>PCR Meth. Appl.</u> , 1:91-98 (1991)  |
|   |  | 63 | Chamberlain et al., "Deletion Screening of the Duchenne Muscular Dystrophy Locus Via Multiplex DNA Amplification," <u>Nucleic Acids Res.</u> , 16:11141-56 (1988)   |
|   |  | 64 | Tsui, Mutations and Sequence Variations Detected in the Cystic Fibrosis Transmembrane Conductance Regulator (CFTR) Gene: A Report From the Cystic Fibrosis Genetic Analysis Consortium," <u>Human Mutat.</u> , 1:197-203 (1992) |
|   |  | 65 | Hollstein et al., "p53 Mutations in Human Cancers," <u>Science</u> , 253:49-53 (1991)   |
|   |  | 66 | Saiki, et al., "Enzymatic Amplification of $\beta$ -Globin Genomic Sequences and Restriction Site Analysis for Diagnosis of Sickle Cell Anemia," <u>Science</u> , 230:1350 (1985)   |
|   |  | 67 | Wu, et al., "The Ligation Amplification Reaction (LAR) -- Amplification of Specific DNA Sequences Using Sequential Rounds of Template-Dependent Ligation," <u>Genomics</u> , 4:560-69 (1989)                                    |
| EXAMINER  |  |    | DATE CONSIDERED   |
| EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. |  |    |   |

|  |   |   |
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| U.S. DEPARTMENT OF COMMERCE<br>PATENT AND TRADEMARK OFFICE<br><br>INFORMATION DISCLOSURE<br>STATEMENT BY APPLICANT<br><br>(use several sheets if necessary)<br><br>(PTO-1449 ) | ATTY. DOCKET NO.<br><br><b>19603/3356</b> | SERIAL NO.<br><br><b>To Be Assigned</b>     |
|  | APPLICANT<br><br><b>Barany et al.</b>     |   |
|  | FILING DATE<br><br><b>Herewith</b>        | GROUP ART UNIT<br><br><b>To Be Assigned</b> |

## U.S. PATENT DOCUMENTS

| EXAMINER<br>INITIAL |  | DOCUMENT<br>NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING<br>DATE<br>IF<br>APPRO-<br>PRIATE |
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## FOREIGN PATENT DOCUMENTS

|  |  | DOCUMENT<br>NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRAN-<br>SLATION<br>IF<br>APPRO-<br>PRIATE |
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|  |  |                    |      |         |       |          |  |

## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

|   |  |    |   |
|---|--|----|---|
|   |  | 68 | Landegren, et al., "A Ligase-Mediated Gene Detection Technique," <u>Science</u> , 241:1077-80 (1988)  |
|   |  | 69 | Winn-Deen, et al., "Sensitive Fluorescence Method for Detecting DNA Ligation Amplification Products," <u>Clinical Chemistry</u> , 37(9):1522-23 (1991)                    |
|   |  | 70 | Barany, "Genetic Disease Detection and DNA Amplification Using Cloned Thermostable Ligase," <u>Proc. Nat'l Acad. Sci. USA</u> , 88:189-93 (1991)                          |
|   |  | 71 | Barany, "The Ligase Chain Reaction n a PCR World," <u>PCR Methods and Applications</u> , 1:5-16 (1991)  |
|   |  | 72 | Gibbs et al., "Detection of Single DNA Base Differences by Competitive Oligonucleotide Priming," <u>Nucleic Acids Res.</u> , 17:2437-48 (1989)                            |
|   |  | 73 | Chehab, et al., "Detection of Specific DNA Sequences by Fluorescence Amplification: A Color Complementation Assay," <u>Proc. Natl. Acad. Sci. USA</u> , 86:9178-82 (1989) |
|   |  | 74 | Livak et al., "Detection of Single Base Differences Using Biotinylated Nucleotides With Very Long Linker Arms," <u>Nucleic Acids Res.</u> , 20:4831-37 (1989)             |
| EXAMINER  |  |    | DATE CONSIDERED   |
| EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. |  |    |   |



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## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

|   |  |    |  |
|---|--|----|--|
|   |  | 75 | Nickerson et al., "Automated DNA Diagnostics Using an ELISA-Based Oligonucleotide Ligation Assay," <u>Proc. Natl. Acad. Sci. USA</u> , 87:8923-27 (1990)         |
|   |  | 76 | Cronin et al., "Cystic Fibrosis Mutation Detection by Hybridization to Light-Generated DNA Probe Arrays," <u>Human Mutation</u> , 7:244-255 (1996)               |
|   |  | 77 | Milner et al., "Selecting Effective Antisense Reagents on Combinatorial Oligonucleotide Arrays," <u>Nature Biotechnology</u> , 15:537-541 (1997)                 |
|   |  | 78 | Wang et al., "Large-Scale Identification, Mapping, and Genotyping of Single-Nucleotide Polymorphisms in the Human Genome," <u>Science</u> , 280:1077-1082 (1998) |
|   |  | 79 | Southern, "DNA Chips: Analysing Sequence by Hybridization to Oligonucleotides on a Large Scale," <u>TIG</u> , 12(3):110-115 (1996)                               |
|   |  | 80 | Barany, "Ligase Chain Reaction (LCR) - Overview and Applications," <u>PCR Methods and Applications</u> , 3(4):S51-S64 (1994)                                     |
|   |  | 81 | Iovannisci et al., "Ligation Amplification and Fluorescence Detection of Mycobacterium Tuberculosis DNA," <u>Mol. Cell. Probes</u> , 7(1):35-43 (1993)           |
| EXAMINER  |  |    | DATE CONSIDERED  |
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## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

|   |  |    |  |
|---|--|----|--|
|   |  | 82 | Telenti et al., "Competitive Polymerase Chain Reaction Using an Internal Standard: Application to the Quantitation of Viral DNA," <u>J. Virol. Meth.</u> , 39(3):259-268 (1992)        |
|   |  | 83 | Guo et al., "Direct Fluorescence Analysis of Genetic Polymorphisms by Hybridization with Oligonucleotide Arrays on Glass Supports," <u>Nucl. Acids. Res.</u> , 22(24):5456-5465 (1994) |
|   |  | 84 | Sambrook et al., <u>Molecular Cloning A Laboratory Manual</u> , 2 <sup>nd</sup> Ed., Cold Spring Laboratory Press (1989)   |
|   |  |    |  |
|   |  |    |  |
|   |  |    |  |
|   |  |    |  |
| EXAMINER  |  |    | DATE CONSIDERED  |
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